

Methods We describe a 5-year-old boy who suffered from chronic recurrent severe lip angioedema for more than 2-years. His symptom was not associated with facial rash or any food ingestion. He was also suffering from dental carries therefore dental extraction was performed for that possibly of secondary gingivitis associated lip angioedema, but without improvement. In occasions he had oral ulcers and the possibility of Behçet's disease was considered for which colchicines was used for more than 3-weeks without benefits. Cervical lymph node biopsy ruled out malignancies.

Results He was found to have chronic congested nasal mucosa. Skin prick test (SPT) for environmental allergens was strongly positive for house dust mites, cockroaches, grass and molds. Nasal findings and SPT confirmed the diagnosis of AR. Over 2-months he has significant improvement (> 70%) in his symptoms with AR treatment (ie; fluticasone spray BID, montelukast 4mg PO OD and loratadine 2.5mg PO OD). Normal C1 esterase level and function ruled out hereditary angioedema.

Conclusion AR is a common disease that should be considered in the differential diagnosis of chronic recurrent lip angioedema. Diagnosis in children may be delayed because of the overlapping diseases (i.e.; viral upper respiratory tract infections). However, hereditary angioedema needs to be ruled out as an important cause of recurrent angioedema.

478 POST-BRONCHIOLITIS RECURRENT WHEEZING IN CHILDREN UNDER 2 YEARS OF AGE - A CLINICAL EPIDEMIOLOGICAL STUDY

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Objectives The research involved tracing some causality relationships among acute bronchiolitis, post-bronchiolitis recurrent wheezing and/or the atopic field.

Material and method The study group was made up of 118 cases of acute bronchiolitis in the children aged 0–2 years, admitted to the 2nd Pediatric Clinic in Craiova, in 2011. Traceable parameters: demographic (sex ratio, age, gestational age, birth weight, socio-economic environment), risk factors (history of pulmonary/heart disease, previous to bronchiolitis onset, prematurity), personal or/and family history of atopy, nutritional state, clinical and radiologic aspects, evolution under treatment, period of hospitalization.

Results Acute bronchiolitis prevalence was of 5%. Most cases were registered in the 6 to 12 months age group (43.2%), males (69.5%), in rural areas (56%), and during cold, wet season (70.2%). 63.6% of the cases had low birth weight. Dystrophy was present in 15.2%, parental rickets 46.7%, parental anemia 63.5% of the cases. 28% of the cases developed recurrent episodes of wheezing associated with lower respiratory tract infections. Radiologic images of pulmonary condensation were present in 77% cases with severe bronchiolitis. Severe bronchiolitis form was associated to a hospitalization period of 7–14 days. The atopic aspect was noticed in 9.3% of the cases. Children with atopy history had a longer period of symptoms and more days of hospitalization as compared to the ones without atopy antecedents.

Conclusions Cigarette smoke exposure, parental rickets, dystrophy, low birth weight, atopy association, all represented risk factors which significantly contributed to the appearance of post-bronchiolitis recurrent wheezing in infants and young children.

479 BIOLOGICAL DIAGNOSIS OF *BORDETELLA* INFECTIONS AND DETERMINATION OF THEIR EPIDEMIOLOGICAL CHARACTERISTICS IN TUNISIAN INFANTS < 1 YEAR OF AGE

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Background and Aims *Bordetella pertussis* and *B. parapertussis* are the causative agents of whooping cough, a re-emerging infectious disease in spite of reasonable vaccination coverage. Specific diagnostic tools were applied for the first time in a Tunisian prospective study in order to get an estimation of the prevalence of *Bordetella* infections, and to evaluate their use to determine the epidemiological characteristics of these infections in Tunisian infants.

Methods Between 2007 and 2011, a total of 626 samples from 599 infants aged < 1 year with and without pertussoid cough were investigated for the presence of *B. pertussis/parapertussis* using culture and real-time PCR (RT-PCR). When possible, patients' household contacts provided nasopharyngeal aspirates (NPAs) for RT-PCR detection of *B. pertussis/parapertussis* or single-serum samples for anti-PT IgG quantification.

Results All except 1 NPA were negative by conventional culture whereas PCR gave positive signals for 126 specimens (21%): *B. pertussis*, *B. parapertussis* and *Bordetella spp.* were detected in 82, 6 and 4% of the samples, respectively. The simultaneous presence of *B. pertussis* and *B. parapertussis* was noted in 8% of the cases. The prevalence of *Bordetella* infection was 20%. Most of these cases corresponded to patients younger than 6 months old who received < 3 doses of pertussis vaccine. Among the household contacts enrolled in the study, mothers were the likely source of infection in 4 cases.

Conclusions This study showed that pertussis is still prevalent in Tunisia and the disease remains a public health problem affecting not only infants but also adults.

480 SUCCESSFUL BLOOD SAMPLE SALVAGING FROM PRETERM INFANTS: MAXIMISING RESEARCH OPPORTUNITIES, MINIMISING PARENTAL AND INFANT INTERVENTIONS

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Background and aims Research improves care for preterm infants but taking blood may be inappropriate/ethically challenging, and limited by patient size. We aimed to 'salvage' residual blood after routine testing, and sought parental perspectives.

Methods We gave parents a single information leaflet and asked permission to collect non-invasive or 'un-used' samples to support a portfolio of research studies: stool/breast milk (gut microbiome), serum (cytokine), and DNA from residual cell pellet (epigenetic). We also sought consent for sample sharing with other approved studies. Parents could decline specific aspects. Serum/cell salvage was stored prior to analysis.

Results 99% of parents participated: 92 recruits provided 527 salvaged blood samples supporting two additional studies to date.

Abstract 480 Table 1

	Infants (parents)
Total approached	92 (81)
Total agreeing to any aspect	91 (80)
Total agreeing to all aspects	82 (76)
Total declining all aspects	1 (1)
Total declining specific elements (of which:)	9 (6)
declining any salvaged blood	1 (1)
declining salvaged DNA	6 (4)
Declining specimen sharing	2 (1)

Conclusions Parents wanted to participate in research with non-invasive sampling/salvage of waste. This provided valuable samples over extensive time periods. This could be used in other vulnerable groups. Bio-banking of such valuable samples may provide important opportunities for future research, avoid additional invasive sampling, and be time efficient.

481 MITIGATION OF THE ALLERGIC ACTIVITY OF OVOMUCOID BY ELECTROLYSIS

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Ovomucoid (OMC) is the most prominent allergen causing egg allergy, and contains disulfide (S-S) bonds that may be responsible for its allergic action. As S-S bonds may be reduced during electrolysis on the cathode side, this study was undertaken to evaluate modulation of the allergic action of OMC after electrolysis. A current of 30 mA/cm² was applied. The allergic action was evaluated by means of skin prick tests (SPT) with egg-allergic patients, and the modification of OMC was examined by MALDI-ToF-MS after tryptic digestion. The total free SH groups in 1% OMC solution were increased on the cathode sides after electrolysis for 30 minutes (14.8 nmol/ml) as against those of untreated OMC (1.2 nmol/ml) and OMC on the anode side (2.8 nmol/ml). Significant mitigation of the wheal reactions by 22% were observed in the SPT with OMC on the cathode when compared with those for untreated OMC, however, the wheal reactions on the anode side did not differ from those for untreated OMC. The MALDI-ToF-MS results for untreated OMC or OMC on the anode side showed two peptide fragments suspecting potential S-S bonds (residues 63L-85S, 358A-379R) but, on the contrary, OMC on the cathode side did not give the fragments suspecting potential S-S bonds. The allergic action of OMC can be mitigated during electrolysis on the cathode side, being simultaneously formed intramolecular free SH groups. This study was supported by the Kieikai, Tokyo, and a Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science.

482 PROSPECTIVE MULTICENTER SURVEY OF COW'S MILK ALLERGY IN NICU NEONATES

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Background and Aims Food hypersensitivity is a common cause of digestive symptoms in neonates. To confirm the diagnosis of neonatal cow's milk allergy (CMA), an oral food challenge (OFC) test should be conducted. However, many neonatologists in Japan avoid OFC because of excessive anxiety regarding induction of severe symptoms and continue to feed babies therapeutic formula without an accurate diagnosis. We conducted a prospective multicenter survey in which the standardized OFC was required in neonates with mild symptoms suggesting CMA.

Methods Neonates presenting with digestive symptoms suggesting CMA and who underwent OFC were enrolled between April 2010 and September 2011. Neonates with severe complications, inborn disorders or severe symptoms at the onset, such as anaphylaxis, mass gastrointestinal bleeding, or perforation, were excluded. This study was conducted as a multicenter survey of major NICUs in Japan.

Results OFC was performed in 52 neonates and positive inductions of symptoms were seen in 23 (44%) of the challenged neonates. The majority had mild digestive symptoms which disappeared immediately after elimination of the causal milk. According to the results of OFC, the sensitivity, specificity, and positive predictive value of milk-specific IgE were 0%, 93%, and 0%, and those of the allergen-specific lymphocyte stimulation test were 61%, 76%, and 67%, respectively.

Conclusions Diagnostic OFCs for CMA were safely carried out in neonates. The discontinuation of certain foods as part of an elimination diet can lead to appropriate nutrition management. In NICUs, OFC should be carried out more aggressively with careful observation.

483 REGIONAL REVIEW OF PAEDIATRIC RADIOALLERGIOSORBENT TESTS® (RAST) OVER 5 YEARS IN IRELAND: AN EPIDEMIOLOGICAL STUDY IN A DEFINED BIRTH COHORT

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Background and Aims RAST and related in-vitro tests assist in diagnosing childhood allergies.

Aims 1. To analyse paediatric RAST results and determine local prevalence of sensitivities, 2. To develop guidelines towards recently introduced ImmunoCAP® test panel selection incorporating local sensitivity prevalence in Ireland.

Methods RAST requests from 0–16 year population in Mid-West of Ireland were analysed between January 2004 to February 2009, excluding those not born in the Regional Maternity Hospital, to gain true birth cohort reflection of sensitivity patterns. Both total and allergen specific IgE levels were tabulated.

Results Total of 3033 successful sample requests for RAST (Immulate 2000) during the 62 month study period qualified for analysis. Standardised classification system for allergen specific allergy levels showed mean total IgE of study population at 314.75 kU/L and median of 52kU/L (expected elevated levels in a possible symptomatic patient sample). 76.8% of tests originated in hospitals and 23.2% from primary care. Most commonly tested allergen was house dust mite (1595) followed by Timothy grass (1155) and at 3rd place food panel 5 comprising egg white, milk, cod fish, wheat, peanut & soya bean. With standardised cut-off levels high and very high levels were noted frequently for egg 5.5%, dust mite 19%, timothy grass 14% followed by Horse, Cat and Dog. Our ImmunoCAP test guidelines incorporated information from RAST audit.

Conclusion Our paediatric RAST analysis provided regional allergen specific sensitivity pattern in Ireland thus assist ing clinicians in choosing appropriate allergens to be requested thus reducing cost and enhancing clinical relevance.

484 CAN RESPIRATORY QUESTIONNAIRE COMPLETION BY PARENTS OBTAIN THE NEED FOR OUTPATIENT ASSESSMENT?

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Background and Aims Continuing care of asthmatic children is traditionally provided in outpatients settings. This study evaluated the effectiveness of both asthma and upper airway cough syndrome assessment by questionnaire and its acceptability to parents.

Methods The parents of children aged 4–13 years, attending an asthma clinic, were requested to complete the Asthma Control Test (ACT) and Respiratory Assessment Proforma (RAP). The RAP